WEST Search History

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DATE: Friday, March 03, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ	
⌐	L8	ralstonia same L7	2
⌐	L7	ralstonia same L3	2
⌐	L6	(gene or sequence or polynucleotide or clone or recombinant) same L5	23
⌐	L5	(degrad$5 or inactiv$5) same L4	50
⌐	L4	(quorum same sensing) or quorum-sensing same L1	312
⌐	L3	(degrad$5 or inactiv$5) same L2	5
⌐	L2	(gene or sequence or polynucleotide or clone or recombinant) same L1	189
⌐	L1	((n-acylhomoserine with lactone with acylase?) or (acylhomoserine with lactone with acylase?) or (AHL with acylase?) or AIIA or QSBA or QSB or (acylhomoserine with lactone with lactonase?)or (AHL with lactonase?))	9635

END OF SEARCH HISTORY

=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE,
    AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS,
    CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB,
    DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 15:06:43 ON 03 MAR 2006

=> s ((n-acylhomoserine(w)lactone(w)acylase#) or (acylhomoserine(w)lactone(w)acylase#) or
(AHL(w)acylase#) or AIIA or QSBA or QSB or (acylhomoserine(w)lactone(w)lactonase#) or
(AHL(w)Lactonase#))

```
       16  FILE ADISCTI
        2  FILE ADISINSIGHT
        6  FILE ADISNEWS
       11  FILE AGRICOLA
        8  FILE BIOENG
       92  FILE BIOSIS
        5  FILE BIOTECHABS
        5  FILE BIOTECHDS
       13  FILE BIOTECHNO
       18  FILE CABA
      103  FILE CAPLUS
        3  FILE CEABA-VTB
        8  FILE CIN
        1  FILE CROPU
        1  FILE DDFB
       39  FILE DDFU
       15  FILE DGENE
        1  FILE DISSABS
        1  FILE DRUGB
       64  FILE DRUGU
        1  FILE EMBAL
       85  FILE EMBASE
       44  FILE ESBIOBASE
       41  FILE FEDRIP
       53  FILE GENBANK
        5  FILE IFIPAT
        1  FILE IMSDRUGNEWS
        1  FILE IMSRESEARCH
       14  FILE JICST-EPLUS
       28  FILE LIFESCI
       90  FILE MEDLINE
        3  FILE NTIS
       39  FILE PASCAL
        1  FILE PHAR
        1  FILE PHARMAML
        1  FILE PHIC
        5  FILE PHIN
    11992  FILE PROMT
       82  FILE SCISEARCH
       40  FILE TOXCENTER
      179  FILE USPATFULL
       32  FILE USPAT2
        2  FILE WATER
       12  FILE WPIDS
       12  FILE WPINDEX
        4  FILE IPA
        1  FILE NAPRALERT
      354  FILE NLDB
```

L1   QUE ((N-ACYLHOMOSERINE(W) LACTONE(W) ACYLASE#) OR (ACYLHOMOSERINE(W) LACTO
     NE(W) ACYLASE#) OR (AHL(W) ACYLASE#) OR AIIA OR QSBA OR QSB OR (ACYLHO
     MOSERINE(W) LACTONE(W) LACTONASE#) OR (AHL(W) LACTONASE#))

=> d rank
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F1    11992  PROMT
F2      354  NLDB
F3      179  USPATFULL
F4      103  CAPLUS
F5       92  BIOSIS
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F6      90  MEDLINE
F7      85  EMBASE
F8      82  SCISEARCH
F9      64  DRUGU
F10     53  GENBANK
F11     44  ESBIOBASE
F12     41  FEDRIP
F13     40  TOXCENTER
F14     39  DDFU
F15     39  PASCAL
F16     32  USPAT2
F17     28  LIFESCI
F18     18  CABA
F19     16  ADISCTI
F20     15  DGENE
F21     14  JICST-EPLUS
F22     13  BIOTECHNO
F23     12  WPIDS
F24     12  WPINDEX
F25     11  AGRICOLA
```

=> file f1-f9, f11-f19

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FILE 'CABA' ENTERED AT 15:11:55 ON 03 MAR 2006
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=> s L1
L2   13299 L1

=> s (gene# or sequence# or polynucleotide# or clone# or recombinant#)(s)L2
  6 FILES SEARCHED...
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'OMBINANT#)(S)L12'
  14 FILES SEARCHED...
L3   207 (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINANT#
)(S) L2

=> s (degrad? or inactiv?)(s)L3
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'INACTIV?)(S)L30'
L4   103 (DEGRAD? OR INACTIV?)(S) L3

=> s ((quorum(s)sensing) or quorum-sensing)(s)L4
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'QUORUM(S)SENSING'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'M-SENSING)(S)L48'
L5   63 ((QUORUM(S) SENSING) OR QUORUM-SENSING)(S) L4

=> s ralstonia(s)L5
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'RALSTONIA(S)L66'
L6   8 RALSTONIA(S) L5

=> dup rem L6
DUPLICATE IS NOT AVAILABLE IN 'FEDRIP'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L6
L7   5 DUP REM L6 (3 DUPLICATES REMOVED)

=> d ibib abs L7 1-5

L7 ANSWER 1 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2005:179006 USPATFULL
TITLE: Ralstonia ahl-acylase gene
INVENTOR(S):   Zhang, Lian Hui, Singapore, SINGAPORE
            Xu, Jin Ling, Singapore, SINGAPORE
            Lin, Yi Han, Singapore, SINGAPORE

                NUMBER   KIND   DATE
            ---------------- ------- --------
PATENT INFORMATION: US 2005155088   A1 20050714
APPLICATION INFO.:   US 2003-502351   A1 20020123 (10)
            WO 2002-SG11   20020123
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET,
            N.W., SUITE 800, WASHINGTON, DC, 20005, US
NUMBER OF CLAIMS: 17
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1379
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB   This invention provides a ***gene*** , ***qsbA*** , which encodes
      a protein useful for ***inactivating***   certain bacterial
      quorum - ***sensing***   signal molecules (N-acyl homoserine
      lactones) which participate in bacterial virulence and biofilm
      differentiation pathways. This ***gene***   was isolated from
      Ralstonia sp., strain XJ12B. The invention also provides the
      QsbA   protein, which possesses N-acyl homoserine lactone
      inactivating   activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7   ANSWER 2 OF 5 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on
    STN   DUPLICATE
ACCESSION NUMBER: 2003256913 ESBIOBASE
TITLE: Utilization of Acyl-Homoserine Lactone Quorum Signals
                    for Growth by a Soil Pseudomonad and Pseudomonas
                    aeruginosa PAO1
AUTHOR: Huang J.J.; Han J.-I.; Zhang L.-H.; Leadbetter J.R.
CORPORATE SOURCE: J.R. Leadbetter, W. M. Keck Laboratories, M/C 138-78,
                    California Institute of Technology, Pasadena, CA
                    91125, United States.
                    E-mail: jleadbetter@caltech.edu
SOURCE: Applied and Environmental Microbiology, (2003), 69/10
                    (5941-5949), 46 reference(s)
                    CODEN: AEMIDF ISSN: 0099-2240
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English

AB   Acyl-homoserine lactones (AHLs) are employed by several Proteobacteria as
    quorum - ***sensing*** signals. Past studies have established
    that these compounds are subject to biochemical decay and can be used as
    growth nutrients. Here we describe the isolation of a soil bacterium,
    Pseudomonas strain PAI-A, that ***degrades*** 3-oxododecanoyl-
    homoserine lactone (3OC12HSL) and other long-acyl, but not short-acyl,
    AHLs as sole energy sources for growth. The small-subunit rRNA
    gene from strain PAI-A was 98.4% identical to that of Pseudomonas
    aeruginosa, but the soil isolate did not produce obvious pigments or AHLs
    or grow under denitrifying conditions or at 42.degree.C. The
    quorum - ***sensing*** bacterium P. aeruginosa, which produces
    both 3OC12HSL and C4HSL, was examined for the ability to utilize AHLs for
    growth. It did so with a specificity similar to that of strain PAI-A,
    i.e., ***degrading*** long-acyl but not short-acyl AHLs. In contrast
    to the growth observed with strain PAI-A, P. aeruginosa strain PAO1
    growth on AHLs commenced only after extremely long lag phases.
    Liquid-chromatography-atmospheric pressure chemical ionization-mass
    spectrometry analyses indicate that strain PAO1 ***degrades***
    long-acyl AHLs via an ***AHL*** ***acylase*** and a
    homoserine-generating HSL lactonase. A P. aeruginosa ***gene*** , pvdQ
    (PA2385), has previously been identified as being a homologue of the
    AHL ***acylase*** described as occurring in a
    Ralstonia species. Escherichia coli expressing pvdQ catalyzed the
    rapid ***inactivation*** of long-acyl AHLs and the release of HSL. P.
    aeruginosa engineered to constitutively express pvdQ did not accumulate
    its 3OC12HSL ***quorum*** signal when grown in rich media. However,
    pvdQ knockout mutants of P. aeruginosa were still able to grow by
    utilizing 3OC12HSL. To our knowledge, this is the first report of the
    degradation of AHLs by pseudomonads or other .gamma.-
    Proteobacteria, of ***AHL*** ***acylase*** activity in a
    quorum - ***sensing*** bacterium, of HSL lactonase activity in
    any bacterium, and of AHL ***degradation*** with specificity only
    towards AHLs with long side chains.

L7   ANSWER 3 OF 5 LIFESCI COPYRIGHT 2006 CSA on STN
ACCESSION NUMBER: 2003:39421 LIFESCI
TITLE: Acyl-homoserine lactone acylase from Ralstonia strain XJ12B
                    represents a novel and potent class of quorum-quenching
                    enzymes
AUTHOR: Lin, Y.; Xu, J.; Hu, J.; Wang, L.; Ong, S.L.; Leadbetter,
                    J.R.; Zhang, L.
CORPORATE SOURCE: Laboratory of Biosignals and Bioengineering, Institute of
                    Molecular and Cell Biology, and Department of Civil
                    Engineering, National University of Singapore, 30 Medical
                    Drive, Singapore 117609.; E-mail: lianhui@
                    imcb.a-star.edu.sg
SOURCE: Molecular Microbiology [Mol. Microbiol.], (20030200) vol.
                    47, no. 3, pp. 849-860.
                    ISSN: 0950-382X.
DOCUMENT TYPE: Journal

FILE SEGMENT: J
LANGUAGE: English
SUMMARY LANGUAGE: English

AB   N-acylhomoserine lactones (AHLs) are used as signal molecules by many
     quorum - ***sensing*** Proteobacteria. Diverse plant and animal
     pathogens use AHLs to regulate infection and virulence functions. These
     signals are subject to biological ***inactivation*** by ***AHL*** -
     lactonases and ***AHL*** - ***acylases*** . Previously,
     little was known about the molecular details underlying the latter
     mechanism. An AHL signal- ***inactivating*** bacterium, identified as a
     Ralstonia sp., was isolated from a mixed-species biofilm. The
     signal ***inactivation*** encoding ***gene*** from this organism,
     which we call aiiD, was ***cloned*** and successfully expressed in
     Escherichia coli and ***inactivated*** three AHLs tested. The
     predicted 794-amino-acid polypeptide was most similar to the aculeacin A
     acylase (AAC) from Actinoplanes utahensis and also shared significant
     similarities with cephalosporin acylases and other N-terminal (Ntn)
     hydrolases. However, the most similar homologues of AiiD are deduced
     proteins of undemonstrated function from available ***Ralstonia*** ,
     Deinococcus and Pseudomonas genomes. LC-MS analyses demonstrated that AiiD
     hydrolyses the AHL amide, releasing homoserine lactone and the
     corresponding fatty acid. Expression of AiiD in Pseudomonas aeruginosa
     PAO1 quenched ***quorum*** ***sensing*** by this bacterium,
     decreasing its ability to swarm, produce elastase and pyocyanin and to
     paralyse nematodes. Thus, ***AHL*** - ***acylases*** have
     fundamental implications and hold biotechnological promise in quenching
     quorum ***sensing*** .

L7 ANSWER 4 OF 5 CABA COPYRIGHT 2006 CABI on STN

AB   N-acylhomoserine lactones, known as autoinducers (AIs), are widely
     conserved signal molecules present in ***quorum*** - ***sensing***
     systems of many Gram-negative bacteria. AIs are involved in the regulation
     of diverse biological functions, including expression of pathogenic
     genes in the plant pathogens Pseudomonas solanacearum [
     Ralstonia solanacearum], several Erwinia species, and the human
     pathogen Pseudomonas aeruginosa. A bacterial isolate, Bacillus sp. 240B1,
     is capable of enzymatic ***inactivation*** of AIs. The ***gene***
     (***aiiA***) for AI ***inactivation*** from Bacillus sp. 240B1 has
     been ***cloned*** and shown to encode a protein of 250 amino acids.
     Sequence alignment indicates that ***AiiA*** contains a
     "HXHXDH" zinc-binding motif that is conserved in several groups of
     metallohydrolases. Site-directed mutagenesis showed that conserved
     aspartate and most histidine residues are required for ***AiiA***
     activity. Expression of ***aiiA*** in transformed Erwinia carotovora
     strain SCG1 significantly reduces the release of AI, decreases
     extracellular pectolytic enzyme activities, and attenuates pathogenicity
     on potato, eggplant [aubergine], Chinese cabbage, carrot, celery,
     cauliflower, and tobacco. Our results indicate that the AI-
     inactivation approach represents a promising strategy for
     prevention of diseases in which virulence is regulated by AIs.

L7 ANSWER 5 OF 5 FEDRIP COPYRIGHT 2006 NTIS on STN

SUM Determine uptake parameters and growth rates of the bacterium Variovorax
     paradoxus during batch and chemostat cultivation on acyl-homoserine
     lactones substrates at low, environmentally relevant concentrations.
     Examine the influence of acyl-homoserine lactone biodegradation on
     quorum - ***sensing*** regulated physiology during batch and
     chemostat co-cultivation of V. paradoxus (a signal ***degrader***)
     with Pantoea stewartii or Pseudomonas aeruginosa (both signal producers).
     Bacteria are often cultivated in batch, planktonic cultures on high but
     environmentally irrelevant concentrations of growth substrates. In these
     studies, bacteria will be grown in continuous culture at low
     concentrations of the substrates of interest, acyl-homoserine lactones. As
     another way to explore this issue, acyl-HSL ***degrader*** will be
     co-cultured with ***quorum***   ***sensing*** , signal producing
     strains. From these, the affinity of the bacteria for the substrates can
     be determined, as well as the growth rate at environmentally realistic
     substrate concentrations.PR ***quorum*** - ***sensing***
     Proteobacteria. These signals are subject to biological
     inactivation by ***AHL*** - ***lactonases*** and ***AHL***
     - ***acylases*** . Previously, little was known about the molecular
     details underlying the latter mechanism. A soil bacterium was isolated
     that ***degrades*** 3-oxododecanoyl-HSL (3OC12HSL) and other long
     acyl, but not short acyl AHLs as sole energy sources for growth. The SSU
     rRNA ***gene*** from strain PAI-A was 98.4% identical to that of
     Pseudomonas aeruginosa, but the soil isolate did not produce obvious
     pigments or AHLs or grow under denitrifying conditions or at 42C. The
     quorum   ***sensing*** bacterium P. aeruginosa, which produces
     both 3OC12HSL and C4HSL, was examined for the ability to utilize AHLs for
     growth. It did so with similar specificity to str. PAI-A, i.e.
     degrading long acyl, but not short acyl AHLs. In contrast to
     strain PAI-A, P. aeruginosa PAO1 growth on AHLs commenced only after
     extremely long lag phases. LC/APCI-MS analyses indicate that str. PAO1
     degrades long acyl AHLs via an ***AHL***   ***acylase*** and
     a homoserine-generating HSL lactonase. A P. aeruginosa ***gene*** ,
     pvdQ (PA2385), has previously been identified as being a homologue of the
     AHL   ***acylase*** described from a ***Ralstonia***
     species. E. coli expressing pvdQ catalyzed the rapid ***inactivation***
     of long acyl AHLs and the release of HSL. P. aeruginosa engineered to
     constitutively express pvdQ did not accumulate its 3OC12HSL ***quorum***
     signal when grown in rich media. However, pvdQ knockout mutants of P.
     aeruginosa were still able to grow utilizing 3OC12HSL. To our knowledge,
     this is the first report of the ***degradation*** of AHLs by
     pseudomonads or other gamma-Proteobacteria, of ***AHL***
     acylase activity in a ***quorum***   ***sensing***
     bacterium, of HSL lactonase activity in any bacteria, and of AHL
     degradation with specificity only towards AHLs with long side
     chains. The stability of ***quorum*** signals under natural conditions
     is poorly understood. we have examined whether acyl-homoserine lactones
     (AHLs), the paradigm class of ***quorum*** signals, are
     degraded in soils. When amended to soils in physiologically
     relevant amounts, 14C-labelled AHL signals were mineralized to 14CO2
     rapidly and without lag. Heating or irradiation of soils prior to the
     addition of radiosubstrate abolished mineralization, whereas addition of a
     protein synthesis inhibitor had no effect. These results establish that
     signal ***degrading*** bacteria are active in doing so in the
     environment, and question the ease in which communications within a
     bacterial population operate effectively in species-rich soils. Impact:
     Bacteria can communicate. These communications play a role in governing
     many microbial processes of agricultural interese, in some cases the
     cuasation of plant diseases, in others the biocontrolled supression of
     them. Our research has identified ***genes*** , enzymes, and bacterial

species involved with the   ***degradation***   signal molecules mediating
these communications. Having an understanding of signal
  degradation   will us to promote beneficial microbial activities and
to supress deleterious ones in the field.PB

=> d his

L1   QUE ((N-ACYLHOMOSERINE(W) LACTONE(W) ACYLASE#) OR (ACYLHOMOSERI

L2   13299 S L1
L3   207 S (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINA
L4   103 S (DEGRAD? OR INACTIV?)(S)L3
L5   63 S ((QUORUM(S)SENSING) OR QUORUM-SENSING)(S)L4
L6   8 S RALSTONIA(S)L5
L7   5 DUP REM L6 (3 DUPLICATES REMOVED)

=> log y